3/3 009 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119477

ABSTRACT/EXTRACT--THE LACQUER SHOULD BE STORED IN POLYETHYLENE BAGS IN 40 1. TIN PLATED FLAGONS OR IN 50 1. POLYETHYLEN BARRELS.

UNCLASSIFIED

USSR UDC 620.70

LUCHEVSKIY, B. A.

"The Use of Harmonic Analysis for Nondestructive Testing of the Quality of Heat Treatment"

Izv. AN BSSR, Ser. Fiz-tekhn. Nauk, No 2, Minsk, 1971, pp 73-78.

Abstract: Tests results have indicated that harmonic analysis can be used for nondestructive testing of the quality of hardening of parts of ball bearing steels, with specific selection of the optimal operating conditions for each type of part. The method was used for experimental testing of Type ShKh-15 steel parts following hardening and tempering. The quality of tempering could be tested on the basis of the amplitude and phase of the first, third, or fifth harmonics at frequencies of 50, 400, and 1,000 Hz. The third harmonic is best.

LUCHINA, K.I.

JPRS 57351
27 Oct 72

SANITARY EDUCATION AS RELATED TO PREVENTION OF INTESTINAL INFECTIONS

UDC: 616.34-022-084:374

[Article by K.I. Luchina, Candidate of Medical Sciences, and A.N. Shibarova; Moscow, Sovetskoye zdravookhraneniye, Russian, No 9, 1972, submitted 6 May 1972, pp 7-10]

Sanitary education of the people, their hygienic knowledge and behavior, plays a special role in the fight against intestinal infections, as in no other branch of medicine. This axiom of epidemiology has long since defined the significance of educational work, its direction in the prevention of such diseases.

During periods of rise in incidence of acute intestinal infections, diverse forms of intensified sanitary education make it possible to reach literally every inhabitant with elementary information on how to protect [illegible] oneself from infection. And it is not surprising that the numerous questionnaires and interviews conducted by the Central Scientific Research Institute of Sanitary [Health] Education on different population groups over a period of five years are indicative of the fact that most of those questioned were well informed about such rules.

At the same time, this circumstance as well as the elementary nature of the necessary hygienic requirements apparently diminishes, to some extent, the people's interest in infectious disease. According to the data of the same institute, the latter constitutes five percent of the overall people's concern about health protection issues. True, recent investigations (E.A. Purina) revealed that during the epidemic outbreak of acute intestinal infections in 1970, people were more concerned and displayed more alertness in this regard. But already in 1971, there was a visible decrease in concern for such disease.

However, even when there was maximum concern on the part of most of the people, one could observe a significant gap between the relatively good hygienic information of people and the significantly lesser application of such information in life ("I know about it but do not do it"). Such a paradox is also observed in other countries with respect to various aspects of safeguarding health, but it is particularly marked with respect to prevention of intestinal infections.

1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--MATHEMATICAL MODELING OF THE NONISOTHERMAL ABSORPTION OF FORMALDEHYDE IN PACKED COLUMNS WITH RECYCLE -U-
AUTHOR-(04)-KAFAROV, V.V., PEROV, V.L., LUCHINA, YE.T., IVANOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(3), 212-15

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MATHEMATIC MODEL, FORMALDEHYDE, GAS ABSORPTION, WATER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0139 STEP NO--UR/0064/70/046/003/0212/0215

CIRC ACCESSION NO--AP0125955

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125955

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUATIONS DESCRIBING THE NONISOTHERMAL ABSORPTION OF HCHO IN H SUB2 O, WHEN THE GASEOUS PHASE TEMP. IS HIGHER THAN THE TEMP. OF THE H SUB2 O AND THE LIQ. IS RECIRCULATED THROUGH A HEAT EXCHANGER, ARE DERIVED; CALCNS. WITH A DIGITAL COMPUTER SHOW THAT WHEN THE RATE OF RECIRCULATION IS INCREASED (UP TO A CERTAIN LIMIT) THE HCHO CONCN. IN THE GAS PASSING FROM ONE ABSORBER TO ANOTHER (AS WELL AS IN THE SPENT GASES) DECREASES, AND TO MINIMIZE THE LOSS OF HCHO WITH THE SPENT GASES THE PROCESS SHOULD BE CARRIED OUT AT LOW TEMPS. (8-10DEGREES). THE USE OF A DROPLET COLLECTOR AFTER THE ABSORBERS SHOULD ALSO REDUCE THE LOSSES OF HCHO.

UNCLASSIFIED

USSR UDC 547.953 + 547.455

VOLKOVA, L. V., LUCHINSKAYA, M. G., SAMOYLOVA, N. A., and PREOBRAZHENSKIY, N. A. (deceased), Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov

"Synthetic Studies of Glycohphospholipids. II. Synthesis of 1,2-Distearoyl-glyceryl-3-phosphoryl-6'-(1',2';3',4'-dicyclohexylidene)-D-Galactose"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, pp 446-449

Abstract: Synthesis of title compound is described. α -D-Galactose was converted to 1,2;3,4-dicyclohexylidene-D-galactose (I) by a reaction with cyclohexanone in anhydrous benzene in presence of sulfuric acid. Treatment of (I) with p-toluenesulfonyl chloride yields 6-tosyl-1,2;-3,4-dicyclohexylidene-D--galactose (II), which reacts with sodium iodide in dimethylformamide to give 6-iodo-6-desoxy-1,2;3,4-dicyclohexylidene-D-galactose (III). The lipid moiety used in further condensation was the dibenzyl ester of 1,2-distearoylglyceryl--3-phosphoric acid (V), which was obtained by condensation of glycerine-1,2-distearoyl-3-iodohydrine with the silver salt of dibenzyl phosphate. Anionic debenzylation with sodium iodide yields the sodium salt of 1,2-distearoyl-glyceryl-3 monobenzyl phosphate which then is converted to the silver salt of the monobenzyl ester of 1,2-distearoylglyceryl-3-phosphoric acid (VI).

1/2

USSR

VOLKOVA, L. V., et al, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, pp 446-449

Finally, condensation of (III) with (VI) in anhydrous benzene gave 1,2-distearoylglyceryl-3-monobenzylphosphoryl-6'-(1',2';3',4'-dicyclohexylidene)-D--galactose, which could be reduced to the title compound -- 1,2-distearoylglyceryl-3-phosphoryl-6'-(1',2';3',4'-dicydlohexylidene)-D-galactose.

2/2

1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--SYNTHETIC STUDIES ON GLYCOPHOSPHOLIPIDS. I. SYNTHESIS OF 1,2:3,4,DI,

AUTHOR-(04)-LUCHINSKAYA, M.G., VOLKOVA, L.V., STUPNIKOVA, V.A., PREOBRAZHENSKIY, N.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 915-918

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LIPID, GALACTOSE, HETEROCYCLIC OXYGEN COMPOUND, ORGANIC SYNTHESIS, STEARIC ACID, PYRIDINE, SULFONE, ORGANIC PHOSPHATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0986 STEP NO--UR/0079/70/040/004/0915/0918

CIRC ACCESSION NO--AP0134702

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134702

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BATYL ALC. AND TOSYL CHLORIDE IN PYRIDINE SHOWN ON MICROFICHE. FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 546.821

LUCHINSKIY, G. P., Khimiya Titana (The Chemistry of Titanium), Izd-vo "Khimiya," Moscow, 1971, 471 pp

Translation of Introduction: Titanium is one of the most prevalent chemical elements anywhere in the earth's crust. Our first knowledge of the moon shows that titanium is apparently spread over its surface even more than on the earth's surface. However, not so long ago, titanium was considered to be a rare element. This is explained by the fact that significant segregations of titanium are found only rarely. In addition, the separation of titanium from accompanying natural minerals of chemical elements, mainly from iron, involves significant difficulties. Therefore, titanium and its compounds did not find broad application for a long time. In particular, the use of titanium in metallurgy did not succeed; the properties of titanium and its compounds were studied only slightly through the first half of the twentieth century. However, the information on elemental titanium nevertheless showed that it could be of great interest in machinebuilding. Titanium was first discovered in 1789 by William Gregor in the form of dioxide. Gregor, a clergyman of the parish of Menaccan in Cornwall, Southwest England, found a black magnetic sand, which in appearance was very similar to gunpowder. From this he separated iron dioxide and a white oxide of an unknown metal. Gregor reported this in French and German journals in 1791. This black sand (Cornwall

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

magnetite) was called menaccanite and the white oxide separated from it was called menaccine. However, this discovery attracted little attention. In 1795, the German chemist M. Klaproth, during his investigation of the so-called "red-soil," or Hungarian rutile, from Boinik in Hungary, separated from it a new oxide, which he called titanium soil in honor of the hero of ancient Greek mythology, Titan. Two years later, Klaproth established that the dioxide he obtained from the Hungarian rutile and the oxide obtained by Gregor from menaccanite were one and the same substance, namely the oxide of the metal which Klaproth had called Titanium. Shortly after, the identity of these oxides was proved by V. A. Lampadius, T. Ye. Lowitz, and others. After Klaproth's discovery, titanium compounds were also found in many other minerals. In 1805, titanium was found in anatase, and it was ascertained that rutile and anatase are mineralogical varieties of titanium dioxide. Later (in the years 1822-1824), Kh. Rose produced titanium dioxide. V. Wollaston found titanium carbonitride in the slag of blast furnaces, but from its appearance he assumed it to be crystalline elemental titanium. By 1849, F. Wehler proved the real composition of this compound (Wollaston's "titanium") by burning it in a chlorine stream. It has sometimes been considered that elemental titanium (although not very pure) was first produced by I. Berzelius

2/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

in 1825 by reduction of potassium fluotitanate by metallic sodium. However, when the known properties of elemental titanium are compared with the properties of Berzelius' "titanium" (e.g., its insolubility in hydrofluoric acid), it can be concluded that the substance obtained by Berzelius did not contain significant amounts of elemental titanium. After Berzelius, many attempts were made to separate elemental titanium. D. K. Kirillov produced relatively pure titanium in 1875 by reducing titanium tetrachloride by sodium. A. Moissan produced elemental titanium in 1885 with only a 2% admixture of carbon by reducing titanium dioxide with carbon in an arc furnace followed by two-stage refining. L. Nil'son and O. Peterson in 1887 produced a substance containing 95% elemental titanium by reducing titanium tetrachloride with metallic sodium in a sealed hermetic steel cylinder. By 1910, M. Knanter [transliterated], improving the method of Nil'son and Peterson, for the first time produced a sample, malleable when hot, but brittle when cold, containing 99.5% elemental titanium. An even purer titanium was produced by A. Van-Arkel' and I deBur [names transliterated] by decomposing tetraiodide at high temperature. Of the titanium compounds, only titanium dioxide was widely known and in practical use for a long time, particularly for use in preparing a white mineral paint, titanium white, and for use in the ceramic industry in producing

3/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

refractory materials, high-quality cements, abrasives, varnishes, enamels, etc. For a long time the main producers of titanium were the United States and Norway. Some special features of titanium raw material and the properties of elemental titanium made extremly difficult the process of separation of titanium from ores. Thus the industrial production of metallic titanium and its alloys proceeded slowly. However, by the end of the first half of the 20th century, a method for the industrial production of metallic titanium by using tetrachloride as the intermediate was developed, so that many difficulties could be overcome. Subsequently, the metallothermal method of reducing tetrachloride was taken as a basis for the metallurgy of titanium. This compound acquired great practical value as an initial material for the industrial production of metallic titanium and also for many titanium-containing materials which were widely adopted. During the last two decades, titanium tetrachloride was studied intensively, although it must be said that even in the first half of the 20th century it was investigated more thoroughly than the other titanium compounds. With the advent of World War I, titanium tetrachloride became known as a smoke-generating substance and it became known as one of the most reactive inorganic substances. For this reason it is used for the production of many

4/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

products of substitution, addition, etc., especially for the production of various organic compounds of titanium, all of which can be of great theoretical and practical interest. Recently, interest has been focused on the other halides of titanium as potential raw materials for the production of metallic titanium. For instance, for the refining of elemental titanium the high-temperature dissociation ability of tetraiodide is used. Tetraiodide is easily obtained by direct synthesis at relatively low temperatures. Of the other compounds of titanium, various chalcogenides (lower oxides, sulfides, selenides, tellurides) are of particular interest; some of them possess semiconductor properties. Many titanates have special electric properties; of greatest interest is barium metatitanate, which has an extremely high dielectric permeability. Nitride, carbide, and also borides and silicides of titanium are characterized by very high hardness, which has resulted in the wide use of these compounds, particularly of titanium carbide, in the production of hard instrumental alloys.

Our country has rich deposits of titanium ores, and their processing and use is one of most important tasks of the national economy. The development of the titanium industry in the USSR is connected with the solution of a number of problems, particularly those discussed in the following.

1. Efficiency in the production of metallic titanium and its compounds.

5/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

Presently, metallic titanium is produced by the reduction of titanium tetrachloride by magnesium or sodium. The titanium produced is spongy, and special reprocessing is necessary to convert the titanium into the compact state. Such a process for producing metallic titanium is very complicated and the titanium itself is still very expensive.

2. Investigation of the system titanium - metals and the natures of the intermetallic titanium compounds. This problem must be solved in order to develop the metallurgy of titanium. Titanium is an excellent addition for the refining of standard steel and alloying special steels and alloys of nonferrous metals.

3. Study of the chemistry of nitrides, carbides, borides, and similar titanium compounds and the systems produced by them in order to produce superhard materials.

4. Searching for new methods of producing high-purity titanium dioxide, which is required for the production of titanium white.

5. Study of the physical chemistry and crystallochemistry of titanates and systems produced by them, in order to solve the problem of their use as Seignette-electrics.

6/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

6. Producing organic titanium compounds. The solution of this problem is connected with the use of organic titanium compounds as catalysts and substances used for processing (impregnation) of various fabrics and also for use in antiknock additives for motor fuel.
7. The use of reducing properties of three- and two-valent titanium alloys in the chemical industry; this will make it possible to replace scarce reducing agents such as zinc dust.
Naturally, in the course of solving these problems, interest in theoretical problems of the chemistry of titanium will increase. Increased production and use of titanium will stimulate the study of the chemical properties of this metal, its compounds, and systems based on it, and will also stimulate the development of methods for synthesizing new titanium compounds.

Translation of Table of Contents:

7/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

8/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

9/23

USSR

LUCHINSKIY, G. P., Khimiya Titana,"Khimiya," 1971, 471 pp

10/23

USSR

LUCHINSKIY, G. P., Khimkya Titana, "Khimiya," 1971, 471 pp

11/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

12/23

USSR

IUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

13/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

15/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

16/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

17/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

18/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

19/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

20/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

21/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

22/23

USSR

LUCHINSKIY, G. P., Khimiya Titana, "Khimiya," 1971, 471 pp

23/23

USSR

UDC 621.791.052.004.12:537.213

STEKLOV, O. I., Candidate of Technical Sciences, and LUCHKIN, R. S., Engineer, Moscow Higher Technical School imeni N. E. Bauman

"Use of the Thermoelectric Potential Method for Studying the Inhomogeneity of Welded Joint Properties"

Moscow, Svarochnoye Proizvodstvo, No 12, Dec 70, pp 34-35

Abstract: The article suggests a method for studying the inhomogeneity of welded joint properties based on a determination of the thermoelectric potential. Aside from internal factors (surface condition of the material, structure and chemical composition of the material, elastoplastic state etc.), the thermoelectric potential value is affected by external factors, viz. the heating temperature and material of the probe tip, the pressure on the tip, the design of the current supply. The character of the thermoelectric potential distribution and the potential value depend on the welding method and heat-treatment conditions for the welded joints.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--ELECTRON PARAMAGNETIC RESONANCE OF PYRIDINE AND THIOCYANATE NITROSYL COMPLEXES OF CHROMIUM I -U-

AUTHOR-(02)-GARIFYANOV, N.S., LUCHKINA, S.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 455-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--CHROMIUM COMPLEX, PYRIDINE, THIOCYANATE, NITROSO COMPOUND, CHROMIUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0636 STEP NO--UR/0062/70/000/002/0455/0456

CIRC ACCESSION NO--AP0119548

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119548

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EPR SPECTRA WERE REPORTED FOR THE NITROSYL COMPLEX OF CR(I) WITH PYRIDINE AT 77DEGREES AND 315DEGREESK. THE THIOCYANATE COMPLEX OF CR(I) IN ME SUB2 CO GAVE AN ISOTROPIC SPECTRUM AT 290DEGREESK THAT WAS SIMILAR TO THE ACTUAL SPECTRUM OF THE NITROSYL COMPLEX WITH PYRIDINE. AT 77DEGREESK BOTH SPECTRA DISPLAY A DEGREE OF AXIAL SYMMETRY OF THE IMMEDIATE ENVIRONMENT OF THE COMPLEX FORMER. THE FINE STRUCTURE SPLITTING FROM PRIME14 N NUCLEUS OF THE NO GROUP AND OF THE EQUATORIAL AND AXIAL LIGANDS OF PYRIDINE AND THIOCYANATE UNITS, AS WELL AS THAT PRODUCED BY THE PRIME53 CR ISOTOPE IS TABULATED. FACILITY: KAZAN. FIZ.-TEKH. INST., KAZAN, USSR.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

1/2 019

TITLE--MICROWAVE SPECTROSCOPIC STUDIES OF AQUEOUS SOLUTIONS OF CHROMIUM III NITRATE AND TOLUENE SOLUTIONS OF CHROMIUM III DIETHYL

AUTHOR-(03)-VISHNEVSKAYA, G.P., KARIMOVA, A.F., LUCHKINA, S.A.

COUNTRY OF INFO--USSR

SOURCE--TEOR. EKSP. KHIM. 1970, 6(1), 128-33

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--EPR SPECTRUM, TEMPERATURE DEPENDENCE, SPIN LATTICE RELAXATION, CHROMIUM COMPLEX, NITRATE, TOLUENE, ORGANIC PHOSPHATE, ORGANIC SULFUR COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1225 STEP NO--UR/0379/70/006/001/0128/0133

CIRC ACCESSION NO--AP0128642

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128642

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EPR LINEWIDTH (ON THE SPECTROMETER JEOL, LAMBDA EQUALS 3 CM) AND NONRESONANCE PARAMAGNETIC ABSORPTION (BY THE METHOD OF HORTER'S PARALLEL FIELDS ON Q-METER) OF TOLUENE SOLNS. OF CR(III) DIETHYL DITHIOPHOSPHATE (I) AND AQ. SOLNS. OF CR(NO SUB3) SUB3 (II) WERE MEASURED. FOR I, DELTAH WAS NOT DEPENDENT ON CONCN. (MAX. DILN. WAS 50 TIMES). TEMP. DEPENDENCE OF DELTAH WAS STUDIED IN THE RANGE 200-423 DEGREES K. BESIDES AN INTENSIVE LINE WITH G EQUALS 1.97, A WEAK COMPLEMENTARY LINE IN THE RANGE OF WEAK FIELDS WAS OBSD. FOR 200-350DEGREES K. TEMP. DEPENDENCE OF SPIN LATTICE RELAXATION TAUL AND SPIN SPIN RELAXATION TAU SIGMA WERE STUDIED BY THE METHOD OF NONRESONANCE ABSORPTION. TAUL IS SIMILAR OR EQUAL TO 10 PRIME NEGATIVE8 SEC INCREASES WITH TEMP. AND REACHES ITS MAX. AT 270DEGREESK FOR I, AT 320 FOR II. TAU SIGMA FOR BOTH I AND II IS OF THE ORDER 10 PRIME NEGATIVE9 SEC AND INCREASES WITH THE TEMP. INCREASE, TAU SIGMA (I) IS GREATER THAN TAU SIGMA (II) FOR THE SAME TEMP. DEPENDENCE OF DELTAH ON TEMP. AND CONCN. FOR II IS GIVEN. STARTING FROM 0.2M SOLNS. FURTHER DILNS. HAVE NO INFLUENCE ON DELTAH. THE SHIFT OF MAX. TO THE SIDE OF HIGHER TEMP. IN II IS MUCH HIGHER IN COMPARISON WITH I. ENERGY OF ACTIVATION FOR THE ROTATIONAL MOTION OF COMPLEXES WAS DETD.: E SUBROT EQUALS 2.0 KCAL-MOLE FOR I, 2.2 FOR II. E SUBVISC CHARACTERIZING THE TEMP. DEPENDENCE OF VISCOSITY, IS 4 AND 2.2 KCAL-MOLE FOR I AND II, RESP. FACILITY: KAZAN. FIZ.-TEKH. INST., KAZAN, USSR.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

1/2 022

TITLE--COMPARATIVE CHARACTERISTICS OF SOME TYPES OF ANESTHESIA AFTER ACTIVITY OF SERUM LACTATEDEHYDROGENASE ISOENZYMES -U-

AUTHOR-(05)-DANILENKO, M.V., BORZHIYEVSKIY, TS.K., BABLYAK, D.YE., KALINOVSKAYA, L.S., LUCHKO, A.S.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 139-142

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANESTHESIA, LACTATE DEHYDROGENASE, STOMACH, SURGERY, LIVER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1699 STEP NO--UR/0475/70/000/004/0139/0142

CIRC ACCESSION NO--AP0129069
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 022

CIRC ACCESSION NO--AP0129069

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LACTATEDEHYDROGENASE WAS STUDIED IN PATIENTS UNDERGOING GASTRIC RESECTION WITH THREE TYPES OF ANESTHESIA. IT WAS FOUND THAT ALTERATIONS OF TOTAL LACTATEDEHYDROGENASE INDEPENDENT OF THE FORM OF ANESTHESIA ARE CONNECTED WITH CHANGES OF ITS LIVER FRACTION. THE DYNAMICS OF LIVER LACTATEDEHYDROGENASE LARGELY DEPENDED ON THE ANESTHESIA TYPE. IN THIS RESPECT TRICHLOETHYLENE PROVED MORE SPARING THAN CHLOROFORM AND CYCLOPROPROPANE. FACILITY: L'VOVSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--PLASTIC RECONSTRUCTION OF THE CRANIAL VAULT TRAUMATIC DEFECTS UNDER CONDITIONS OF SURGICAL DEPARTMENTS -U-
AUTHOR-(03)-GIRSHOVICH, YE.I., LUCHKO, G.D., PYSHNOVA, M.A.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 4, PP 126-129
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CEREBRUM, ORTHOPEDIC SURGERY, BONE GRAFT, ORGANIC GLASS, PLASTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0043 STEP NO--UR/0589/70/104/004/0126/0129

CIRC ACCESSION NO--AP0105142
UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--18OCT70

CIRC ACCESSION NO--AP0105142

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN 33 PATIENTS WITH CRANIOCEREBRAL INJURIES VARIOUS KINDS OF CRANIAL DEFECTS PLASTY WERE EMPLOYED (LOCAL, GRAFTS FROM THE ORGANIC GLASS AND STYRACRYL). PRIMARY PLASTY WAS PERFORMED IN 25 PATIENTS. PRIMARY ALLOCRANIOPLASTY COULD BE SUCCESSFULLY USED IN NON SPECIALIZED DEPARTMENTS, TO DATE, HOWEVER, LOCAL BONE PLASTY IS STILL OF MAJOR IMPORTANCE.

UNCLASSIFIED

USSR

UDC 622.235.5

VOVK, O. O., and LUCHKO, I. A., Institute of Geotechnical Mechanics, Academy of Sciences Ukrainian SSR

"On the Similarity Principle in Explosions of Cylindrical Horizontal Bump Charges"

Kiev, Dopovidi Akademiyi Nauk Ukrayins'koyi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 11, Nov 70, pp 1038-1041

Abstract: It is known that the principle of geometric similarity is applicable to concentrated bump charges. According to this principle the size of craters grows in proportion to the size of the charge for certain charge values, charge action indices and charge seat depths. The article describes results obtained by the authors in the Kiev Department of the Institute of Geotechnical Mechanics, Academy of Sciences Ukrainian SSR, by conducting a series of experimental explosions on the explosion testing grounds of the Academy of Sciences Ukrainian SSR. The soil was clayey. There were over a hundred explosions of elongated hori-

USSR

VOVK, O. O., and LUCHKO, I. A., Dopovidi Akademiyi Nauk Ukrayin-s'koyi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 11, Nov 70, pp 1038-1041

zontal charges weighing 2-33 kg/r.m. at a charge seat depth of 0.25-1.8 m. Various explosives were used. An expression is obtained for the explosion action index as a function of the reduced charge seat depth. It is found that over the entire investigated range of values for the explosion action index constancy of the reduced excavation radius values is not maintained, as follows from the geometric similarity principle. Hence the conclusion may be drawn that this regularity arises only in a certain optimal range of values for the explosion action index, which corresponds to the optimal range of charge seat depth values. However, in ordinary engineering calculations deviations in excavation parameter values from those theoretically obtained with the use of the geometric similarity law need not be taken into consideration as they do not significantly affect the accuracy of the results. Consequently, the geometric similarity

2/3

USSR

VOVK, O. O., and LUCHKO, I. A., Dopovidi Akademiyi Nauk Ukrayins'koyi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 11, Nov 70, pp 1038-1041

may also be used in the calculation of cylindrical charges without significant errors, as is done in calculations of spherical charges. Formulas are obtained for the calculation of elongated bump charges, valid for explosion action index values of from $1 \div 1.5$ to $3.5 \div 4$.

3/3

UDC 621.793.6

USSR

KAYDASH, N. G., CHASTOKOLENKO, P. P., TKACHENKO, P. A., TATARCHUK, V. S., LUCHKO, M. V., LUTSENKO, L. I., Uman Pedagogical Institute

"Diffusion Titanation of Type 45 Steel"

Moscow, Zashchita Metallov, No 4, 1972, pp 508-509

Abstract: One promising method for increasing the heat resistance of steels is diffusion saturation of their surface with metals, particularly titanium. The authors studied the structure, composition, and certain properties of diffusion layers formed on type 45 steel upon saturation of the surface with titanium. This process forms dense coatings, firmly bonded to the base metal. Metallographic analysis has shown that the titanium coatings have a columnar structure. Their microhardness on the surface of the specimen is 330 kg/mm^2, decreasing linearly to 200 kg/mm^2 at 340 μ from the surface due to decreasing titanium concentration. The titanium coatings on type 45 steel consist of a phase with a body-centered cubic lattice with parameters a=2.8991 A on the surface of the specimen. The a=2.8768 A line of iron was also discovered in the same zone. At 900°C and less, the titanium-treated steel had heat resistance equal to type 1KH18N9T chrome-nickel steel, but was oxidized more strongly at 980°C.

1/1

USSR

UDC 523.165

VOLOBUYEV, S. A., GAL'PER, A. M., KIRILLOV-UGRYUMOV, V. G., LUCHKOV, B. I., OZEROV, YU. V.

"Observation of Gamma-Ray Quanta With an Energy Over 100 Mev From the Region of the Crab Nebula"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 12, Dec 71, pp 2463-2465

Abstract: The Cosmos-251, Cosmos-264, and Cosmos-280 artificial earth satellites had a device to record gamma-ray quanta with energies $E_\gamma \gtrsim 100$ Mev. The device was a gamma-ray telescope consisting of two scintillation counters and one directional Cerenkov counter with a lead converter. In flights 1 and 3 the viewing angle of the device took in the galactic plane. In flight 1 the device viewed the region of space where the Crab Nebula is found. A detailed analysis of the flight 1 data, consisting in a study of the initial, intermediate, and final orbit results, showed that excessive gamma radiation emanates from the region bounded by the coordinates $\delta = 0 + 13^\circ$, $\alpha = 3.6 + 5^h$,

USSR

VOLOBUYEV, S. A. et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 12, Dec 71, pp 2463-2465

which includes neither the Crab Nebula nor the galactic plane. The excessive flux from this region is 2.0 ± 0.6 per interval. It is suggested that this flux is due to a point source in the region of the constellation Taurus rather than a line source in the galactic plane.

Miscellaneous

USSR

UDC 523.164

GAL'PER, A. M., KIRILLOV-UGRYUMOV, V. G., LUCHKOV, B. I., and PRILUTSKIY, O. F.

"Cosmic Gamma-Radiation Research"

Moscow, Uspekhi Fizicheskikh Nauk, Vol 105, No 2, Oct 71, pp 209-250

Abstract: The article is a survey systematizing methods, experimental data, and theoretical work on cosmic gamma radiation. Gamma radiation is formed in the interaction of energetic particles with matter and radiation, the annihilation of matter and antimatter, and in radioactive decay. Methods for studying cosmic gamma radiation include gamma-ray telescopes with Geiger, scintillation, Cerenkov, and semiconductor detectors used as counters; "blind" gamma-ray telescopes (used on some artificial earth satellites); spark gamma-ray telescopes of G. H. FRYE et al (used in many cases on balloons); and the nuclear photoemulsion method. Areas of gamma-astronomy research include measurements of the intensity of diffuse cosmic gamma radiation (isotropic metagalactic and anisotropic galactic components), the search for discrete sources, the study of secondary gamma radiation in the upper layers of the atmosphere. A great deal of work has been devoted to the search for gamma radiation from the Crab Nebula as well as the radio sources Swan A and Virgo A and the sun. Al-

1/2

USSR

GAL'PER, A. M., et al., Uspekhi Fizicheskikh Nauk, Vol 105, No 2, Oct 71, pp 209-250

though the results of cosmic gamma-radiation research are rather indefinite and sometimes even contradictory, important conclusions can be drawn on a number of cosmological problems (estimates of the density of metagalactic cosmic rays, the density of antimatter in the universe) and our ideas concerning processes occurring in some cosmic objects (radiogalaxies, quasars, remnants of supernovae, etc.) can be refined. The survey concludes by considering astrophysical applications of the results of cosmic gamma-radiation research, models explaining the origin of different components, and experiments important for the verification of particular models, as well as prospects for the further study of cosmic gamma radiation.

2/2

1/2 03C UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--STUDY OF PRIMARY GAMMA RAYS OF ENERGIES HIGHER THAN 100 MEV BY MEANS OF A SATELLITE CARRIED SPARK CHAMBER -U-

AUTHOR-(05)-VOLOBUEV, S.A., GALPER, A.M., KIRILLOVUGRIUMOV, V.G., LUCHKOV, B.I., OZEROV, I.V.

COUNTRY OF INFO--USSR, HUNGARY

SOURCE--INTERNATIONAL CONFERENCE ON COSMIC RAYS, 11TH, BUDAPEST, HUNGARY, AUGUST 25-SEPTEMBER 4, 1969, PROCEEDINGS. VOLUME 1 ORIGIN AND GALACTIC

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, SPACE TECHNOLOGY

TOPIC TAGS--GAMMA RAY, SPARK CHAMBER, SPACECRAFT CARRIED EQUIPMENT, ARTIFICIAL EARTH SATELLITE/(U)COSMOS 264 SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605061/B06 STEP NO--HU/2506/70/029/000/0127/0129

CIRC ACCESSION NO--AT0144431

UNCLASSIFIED

2/2 . 030 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AT0144431

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IDENTIFICATION OF EVENTS CORRESPONDING TO GAMMA RAY REGISTRATION AND ASSEMENT OF THE GAMMA RAY FLUX USING A DVEICE WITH A MULTIPLATE WIDE GAP SPARK CHABER. AN ATTEMPT HAS BEEN MADE TO ISULATE GALACTIC GAMMA RAY FLUX. THE INSTRUMENT WAS MOUNTED ON THE SATELLITE COSMOS 264. MORE THAN 100,000 STEREUPHOTOS WERE TAKEN OF EVENTS IN THE SPARK CHAMBER. FACILITY: MOSKOVSKII INZHENERNO-FIZICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

USSR UDC 616.71-001.5-003.93-092.9-02:615.837.3+615.849.112

LUCHKOV, V. I., and MUKHIN, P. YE., Central Clnical Hospital, Fourth Main Administration, Ministry of Health USSR, Moscow

"Comparison of the Effects of Ultrasound and Microwaves on the Healing of Fractures in Rabbits"

Moscow, Ortopedia, Travmatologiya i Protezirovaniye, No 9, 1971, pp 65-68

Abstract: The course of repair processes in rabbits after fracture of the radial bone and exposure of the injured area to various intensities of ultrasound (0.4 to 0.7 w/cm^2) or microwaves (0.47 w/cm^2) were studied by x-ray and histological methods. At various times after the trauma, the shadow or callus on the x-rays was more pronounced in the animals exposed to microwaves, an indication that the microwaves had a greater effect on callus formation than did ultrasound. Thus, microwaves are more likely to stimulate the healing of fractures in man than ultrasound. Histological examination failed to reveal any differences between the control and experimental rabbits.

1/1

USSR

UDC: 615.837.3.015.45:612.753

LUCHKOV, V. I., and MUKHIN, P. Ye., Central Clinical Hospital, Fourth Main Administration, Ministry of Health USSR, Moscow

"The Effect of Ultrasound on Callus Formation in Rabbits"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 6, Nov/Dec 70, pp 44-46

Abstract: The middle third of the radial bone of rabbits was sawed through and the operated area was exposed to ultrasound of various intensities daily for 7 days. On the 10th day, X-ray examination showed no significant differences between the control and experimental animals with respect to the condition of the callus. On the 20th day, the periosteal callus was largest in animals exposed to 0.7 w/cm^2 for 8 minutes, beginning the 10th day after the operation (group 1), and smallest in the animals exposed to 0.4 w/cm^2 for 5 minutes, beginning the 3rd day (group 2). The density of the callus was the same in the control and group 1 animals, but was appreciably higher in group 2 (exposure to 0.7 w/cm^2 for 8 minutes beginning the 3rd day) and group 3 animals. Whereas on the 20th day the cleft in the bone of the control was still quite evident, it was barely perceptible in the group 2 and group 3 rabbits. Histological examination of the callus in control and experimental animals failed to reveal any significant differences.

1/1

USSR

UDC 621.73.042:62-412

NAZHAROVA, G. YE., BATENEVA, M. K., SIDORENKO, G. V., GUPALO, V. G., and LUCHKOVA, L. I.

"Effect of Deformation on the Structure and Properties of R18 Steel"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 7, Jul 71, pp 13-15

Abstract: The first ingots of R18 steel forged by upsetting have been tested at the Dneprospetsstal' Plant. Ingots from oncheat were forged by existing plant technology and by an experimental method.

Existing technology:

1. Heating an ingot weighing 590 kg in a continuous furnace up to 1250°C for one hour.
2. Drawing the ingot on a 5-ton drop forge along into a blank with a 260-mm square side and cutting into standard length.
3. Heating the standard blank in a continuous furnace up to 1250°C for 30 minutes.
4. Drawing the standard blank into a blank with a 160-mm square side.

1/3

USSR

MASHAKOVA, G. YE., et al., Kuznechno-Shtampovochnoye Proizvodstvo, No 7, Jul 71, pp 13-15

5. Cooling the blanks in unheated coolers for 36 hours.

Experimental technology:

1. Same as 1 above.
2. Same as 2 above except 220-mm dimension is used.
3. Same as 3 above.
4. Upsetting standard blanks along the ingot axis to a height equal to 1/2-1/3 the original height, turning 90° and drawing in a direction perpendicular to the ingot axis, down to ingots with a 120-mm square side with an intermediate heating to 1250°C for 15-20 min.
5. Same as 5 above.

2/3

USSR

KAZHAROVA, G. YE., et al., Kuznechno-Shtampovochnoye Proizvodstvo, No 7, Jul 71, pp 13-15

As a result of increasing the forging reduction ratio and deformation of metal throughout its volume, crushing of the eutectic lattice occurs along with a more uniform distribution of the carbide phase. Mechanical properties of metal forged as described are better than when forged by the conventional technology, as a result of which transverse forging provides a deeper and more uniform working of the metal. A disadvantage of experimental technology is the additional preheating which lowers productivity of the forging machinery by 15-20%. Two figures, one table, three bibliographical references.

3/3

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SYNTHESIS OF REPELLENTS. AMIDES OF O ALKYLPHOSPHORIC ACIDS -U-

AUTHOR-(03)-LUCHKOVSKAYA, O.N., BATAYEV, P.S., TSIZIN, YU.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 644-6

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORGANIC SYNTHESIS, INSECT REPELLENT, ALIPHATIC PHOSPHORUS COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0726 STEP NO--UR/0079/70/040/003/0644/0646

CIRC ACCESSION NO--AP0126438

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0126438
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF (ROSUB2 POCL WITH 3 EQUIVS. AMINE IN ET SUB2 O OR C SUB6 H SUB6 GAVE: SHOWN ON MICROFICHE.
FACILITY: INST. MED. PARAZITOL. TROP. MED. IM. MARTSINOVSKOGO, MOSCOW, USSR.

UNCLASSIFIED

USSR UDC 616-001.28+616.12-073.97

CHAMLYTKA, A. A., SIDARENKA, YA. R., RABTSEVICH, T. S., LUCHNIKOV, YA. F., LYSTSOVA, G. V., PLENINA, G. M.

"Cardiac Function During the Various Periods of Acute Radiation Sickness in Dogs"

Minsk. Vesti Akademiyi Nauk BSSR Seryya Biyalagicheskikh Nauk, No 1m 1970, pp 76-84

Abstract: A complete study of 92 dogs was made including behavior, weight, temperature, hemocytology, serum chemistry - including all its fractional compenents, A/G ratio, pulse resporation, EKG studies, etc., before irradiation with a single dose of 600 r and during the various phases of radiation sickness. A total of 41 controls and 50 dogs treated 7-9 days after irradiation were studied. As the animals died, autopsies were performed, and complete gross, histological and pathomorphological studies were correlated with other findings. Disorganization of cardiac function in the dead and surviving animals, together with eletrocardiographic studies, were recorded concurrently with other clinical, laboratory, and 1/2

USSR

CHAWLYTKA, A. A., et al., Minsk, Vesti Akademiyi Nauk BSSR, No 1, 1970, pp 76-84

physiological changes. Histological studies in treated animals show the reversability of myocardial shifts with only minor sequelae.

2/2

USSR

UDC 616.12-001.29

LUCHNIKOV, YE. P., Laboratory of Pathological Anatomy, Institute of Medical Radiology, Academy of Medical Sciences USSR

"Histochemical and Histological Changes in the Heart Shortly After Local Irradiation"

Moscow, Kardiologiya, No 2, 1970, pp 101-105

Abstract: Local irradiation of the rabbit heart (600 and 1200 rad) resulted in circulatory disorders, partial disappearance of glycogen from the muscle fibers, changes in enzymatic activity, and impaired permeability of the mitochondrial membranes within a few hours of exposure. The changes progressed, and after 1½ months degeneration of the muscle fibers and areas of microfocal cardiosclerosis could be seen. Complete restoration did not take place even after 47 days (the observation period). The sites of the necrotic muscle fibers were characterized by a lack of enzymatic activity, proliferation of connective tissue, and, less commonly, growth of fatty tissue around the blood vessels.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PHOTONEPHELOMETRIC METHOD FOR DETERMINING BETA LYSINS IN SERUM -U-

AUTHOR-(03)-SUKHARIN, O.V., LUDA, A.P., BIGEYEVA, R.I.

COUNTRY OF INFO--USSR

SOURCE--LAB. DELO 1970, (3), 160-2

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BACTERICIDE, BLOOD SERUM, BACILLUS SUBTILIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0431 STEP NO--UR/9099/70/000/003/0160/0162

CIRC ACCESSION NO--AP0132656

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0132656
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RELIABLE PHOTONEPHELOMETRIC METHOD FOR DETN. OF BETA LYSINS IN SERUM WAS DEVELOPED. IT IS BASED ON ANTIBACTERIAL ACTIVITY OF SERUM CONTG. BETA LYSINS AGAINST BACILLUS SUBTILIS. FACILITY: ORENBURG. MED. INST., ORENBURG, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.6:621.315.61

LUDUPOV, Ts. Zh., IVANOV, V. F., ANIKIN, I. N., SHUMARINA, Ye. I.

"Dielectric Properties of Artificial Mica Along the Plane of Cleavage on Superhigh Frequencies"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Technology. Scientific and Technical Collection. Materials), 1970, vyp. 3, 52-57 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V418)

Translation: The authors give the results of measurement of complex permittivity along the plane of cleavage parallel to crystallographic axes *a* and *b* in fluorophlogopite by a waveguide method in the millimeter and centimeter ranges. Artificial mica is investigated in the 20-200°C temperature range on a frequency of 10^{10} Hz. Resumé.

1/1

USSR

UDC 547.241

KARLOTEDT, M. B., PROSKURNINY, M. V., and LUFENKO, I. S., Moscow State University

"Dialkoxyphosphines. II. The Addition of Dialkoxyphosphines to Aldehydes"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2418- 2421

Abstract: Dialkoxyphosphines react with aldehydes in inert solvents with a strong evolution of heat in the absence of a base catalyst as follows:

$$(RO)_2PH + R'CHO \longrightarrow R'CH(OH)-P(OH)_2$$

Monitoring the reaction, using the IR spectra at 2220 cm^{-1} (the P—H band) and at 3300 cm^{-1} (the O—H band), shows that the reaction is practically complete in an hour. For example, the reaction of dibutoxyphosphine with isobutoxyaldehyde followed by treatment with trimethyliodide forms the α-oxyphosphinate and in addition the α-oxyphosphinate dimer. The dimer was not observed when acetylaldehyde was used as a starting material. Structures were confirmed by IR, NMR and mass spectra. Preparative procedures and various physical and chemical data are given.

1/1

USSR

UDC 517.53:517.947.42

LUFERENKO, V. P., and SUVOROV, G. D., Corresponding Member of the Academy of Sciences Ukrainian SSR, Donetsk Computer Center of the Academy of Sciences Ukrainian SSR, Donetsk State University

"On the Concept of the Prime End Body in Carathéodory's Theory"

Kiev, Dopovidi Akademii Nauk Ukrains'koi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 2, Feb 71, pp 106-108

Abstract: The article contains some simple remarks on the concept of the "boundary element body" and gives a simple generalization of this aspect of Carathéodory's theory for the case of mappings of arbitrary metric spaces. The authors consider the two metric spaces $A^\alpha = (A, r^\alpha)$ and $A^\beta = (A, r^\beta)$ with the common carrier $A = \{X\}$ and different (in the general case) metrics $r^\alpha = r^\alpha(X_1, X_2)$ and $r^\beta = r^\beta(X_1, X_2)$. Let $\tilde{A}^\alpha$, $\tilde{A}^\beta$ be augmentations of these spaces with respect to r^α and r^β respectively. The elements of the augmented spaces A^α and $\tilde{A}^\beta$ are called points, designated as t^α and t^β and understood to be classes of equivalent fundamental sequences. Let $t^\alpha \in \tilde{A}^\alpha$ and $t^\beta \subseteq \tilde{A}^\beta$. $t^\alpha | t^\beta \neq \theta$ is written if in A there exists an infinite sequence of points $\{X_n\}$ such that $(X_n) \in t^\alpha$ and $(X_n) \in t^\beta$. Said to be the body of

USSR

LUFERENKO, V. P., and SUVOROV, G. D., Dopovidi Akademii Nauk Ukrains'koi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 2, Feb 71, pp 106-108

point $t^{\alpha} \in \tilde{A}^{\alpha}$ in a space is the set of points in the space A^{β}, which is given by the formula

$$t^{\beta}|t^{\alpha}| = \bigcup t^{\beta}$$

$$(t^{\beta} \in \tilde{A}^{\beta} : t^{\alpha}|t^{\beta} \neq \theta). \qquad (1)$$

The point $t^{\alpha} \in \tilde{A}^{\alpha}$ is said to be simple with respect to $\tilde{A}^{\beta}$ if $t^{\beta}|t^{\alpha}|$ contains altogether one point of the space $\tilde{A}^{\beta}$.

The following theorem is given: In order for all points of the space A^{α} to be simple with respect to $\tilde{A}^{\beta}$ it is sufficient, and in the case of the compactness of $\tilde{A}^{\alpha}$ and $\tilde{A}^{\beta}$ it is also necessary, that the following condition be fulfilled: $E \in (a) \alpha \beta$ on A^{α}.

Corollaries of the theorem are given without proof of the theorem itself.

2/3

USSR

LUFERENKO, V. P., and SUVOROV, G. D., Dopovidi Akademii Nauk Ukrains'koi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 2, Feb 71, pp 106-108

The following theorem is also stated: In order for the point $t^\alpha \in \tilde{A}^\alpha$ to be simple with respect to $\tilde{A}_\beta$ it is sufficient, and in the case of the compactness of $\tilde{A}^\beta$ it is also necessary, that the following condition be fulfilled: $\omega^\beta(E, t^\alpha) = 0$.

The authors note that analogous constructions are possible in the case of aggregates of metric spaces and mappings, and this will be considered in another article.

3/3

USSR UDC: 621.372.54

MOROZOV, L. N., LUGANIN, V. A., PODKHALYUZIN, V. A.

"Printed-Circuit Microwave Filters"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Academic Institutes of Communications. Ministry of Communications of the USSR), 1971, vyp. 53, pp 209-212 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3D28)

Translation: The paper presents the results of development of printed-circuit opposed-pin filter designs which give stable frequency response both under normal conditions and in a given temperature range. An investigation is made of filter designs which differ in the type of cavity grounding. Bibliography of three titles. N. S.

1/1

USSR

UDC 621.396.677.861.061.1

BAKSENBURG, S. I., GUREVICH, V. I., and LUGANIN, V. A.

"Synthesis of Homogeneous Polarization Radiation Patterns in Single-Reflector Antenna Systems"

Moscow, Antenny, No 12, 1971, pp 34-46

Abstract: The authors analyze polarization patterns PD (the dependence of the radiated field polarization on the angular direction) which are homogeneous, i.e., the field polarization is constant over the entire antenna radiation pattern, for axial-symmetric and offset-feed highly directional reflector antennas. Optimal homogeneous PD have been difficult for form, particularly in antennas having adjustable polarization, and such systems have been hard to design. A rectangular waveguide horn having Huygens' sources distributed over the aperature is used as the primary radiator. The antenna electric field vector components in polar coordinates are used to relate the feed and aperature field phasors. By solving this relationship, the synthesis conditions for a homogeneous PD are obtained and applied to axial-symmetric and circularly, linearly, and elliptically polarized offset-feed reflector antennas. The first two types require that the feed radiates a homogeneous circularly polarized field, while the offset linear PD requires that the radiator field contains a

1/2

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201820017-8"

USSR

BAKSENBURG, S. I., et al., Antenny, No 12, 1971, pp 34-46

component polarized orthogonally to the basic component and which has an antiphased radiation pattern with respect to the corresponding amplitude and initial phasing. For the offset elliptical version, the polarization ellipse formed by the electric feed radiation field vector components should be rotated by a certain angle, while the phase patterns of two orthogonal components should differ and the differential phase pattern should be of odd parity. The polarization field structure in the aperature is described for sets of cophased parallel and orthogonal electric and magnetic dipoles and 90° out-of-phase vertical and horizontal electric and parallel electric and magnetic dipole sources. Equations are formulated to relate the feed aperature mismatch to the antenna PD. Thus, without considering the antenna radiation characteristics in the far-field region, the conditions for forming homogeneous PD and determining the polarization structure in the aperature is made possible for various types of primary sources.

2/2

1/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--FREE RADICALS AND ENERGY EXCHANGE IN LEUKOCYTES DURING LEUKOSES -U-

AUTHOR--KLOCHKO, E., KOVALCHUK, L., KRUGLYAKOVA, K., SEITS, I., LUGANOVA, I.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(2), 476-9

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LEUKOCYTE, EPR SPECTRUM, RESPIRATION, PHOSPHORYLATION, FREE RADICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1800 STEP NO--UR/0020/70/190/002/0476/0479

CIRC ACCESSION NO--AT0101847

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--11SEP70

2/2 024

CIRC ACCESSION NO--AT0101847

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHANGES IN CONCN. OF FREE RADICALS WERE FOLLOWED BY EPR SPECTRA IN HUMAN LEUKOCYTES DURING LEUKOSES. AN INCREASED CONCN. OF FREE RADICALS IN LEUKOSIS WAS CONNECTED WITH A DISTURBED SYSTEM OF COUPLING BETWEEN RESPIRATION AND PHOSPHORYLATION REACTIONS.

UNCLASSIFIED

USSR

UDC: 577.3

KLOCHKO, E.V., KOVAL'CHUK, L.V., KRUGLYAKOVA, K.YE., SEYTS, I.F., LUGANOVA, I. S., BLINOV, M.N., and EMANUEL', N.M., Academician, Institute of Chemical Physics, Academy of Sciences USSR

"Free Radicals and Metabolism in Leukocytes During Leukoses"

Moscow, Doklady Akademii Nauk, Vol 190, No 2, 1970, pp 476-479

Abstract: The content of free radicals in leukocytes from chronic lymphatic leukosis and chronic myeloid leukosis patients was studied after the cells were incubated with various metabolic poisons - monobromoacetate, sodium fluoride, 2,4-dinitriphenol, and oligomycin. The concentration of free radicals decreased by 50% after "leukemic" leukocytes were exposed to 2,4-dinitrophenol, an uncoupler of oxidative phosphorylation in the early stages. The use of oligomycin, an uncoupler of oxidative phosphorylation in the later stages, did not have an appreciable effect on the level of free radicals. The incubation of healthy leukocytes with 2,4-dinitrophenol or oligomycin likewise had no effect on the concentration of free radicals. The level of free radicals in the leukocytes of both leukotic patients and healthy persons was not affected either during inhibition of glycolysis with sodium fluoride or stimulation during anaerobiosis. Monobromoacetate, which blocks glycolysis, had a more pronounced effect. It would appear that the high content of free radicals in leukocytes during leukosis signifies a disturbance of oxidative phosphorylation.

1/1

USSR

UDC 681.3

BOYARCHENKO, A. N., LUGANSKAYA, L. A.

"Results of Approximate Consideration of Influence of Computer Reliability on Calculation Time of Problems Solved in Enterprise ACS"

Tr. NII Upravl. Mashin i Sistem [Works of Scientific Research Institute for Control Machines and Systems], No 5, 1971, pp 77-82, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V750).

NO ABSTRACT.

1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EFFECT OF HYPOTENSIVE THERAPY ON OXIDATIVE PROCESSES IN PATIENTS WITH HYPERTENSIVE DISEASE -U-

AUTHOR-(02)-KOZINTSEVA, P.V., LUGANSKIY, YU.N.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 6, PP 18-21

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYPERTENSION, ANTIHYPERTENSIVE AGENT, OXYGEN, BIOLOGIC OXIDATION, OXIDATION REDUCTION REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1742 STEP NO--UR/0475/70/000/006/0018/0021

CIRC ACCESSION NO--AP0129110

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129110

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BLOOD VAKAT OXYGEN WAS STUDIED IN 110 PATIENTS (ELDERLY AND MEDIUM AGED) WITH HYPERTENSIVE DISEASE, STAGE II AND III. BEFORE TREATMENT WITH HYPOTENSIVE DRUGS THE MAJORITY OF PATIENTS SHOWED AN INCREASED BLOOD VAKAT OXYGEN. UNDER THE EFFECT OF TREATMENT WITH ISMELIN, ISMELIN PLUS THIAZIDES, OXYGEN BEVERAGE THE OXIDATION REDUCTION PROCESSES IMPROVED, A MORE DISTINCT REDUCTION OF THE BLOOD VAKAT OXYGEN BEING OBSERVED IN PATIENTS WITH HYPERTENSIVE DISEASE, STAGE II. TREATMENT WITH THIAZIDES ONLY DID NOT RESULT IN A DISTINCT REDUCTION OF THE BLOOD VAKAT OXYGEN. FACILITY: OTDEL FUNKTSIONAL'NOY DIAGNOSTIKI KIYEVSKOGO NAUCHNO-ISSLEDOVATEL'SKOGO INSTITUTA KLINICHESKOY MEDITSINY IMENI AKAD. N. D. STRAZHESKO.

UNCLASSIFIED

USSR UDC 621.373.826:53

KALINENKO, A. N., LUGIN, E. V., and TVOROGOV, S. D.

"Propagation of a Short Pulse of Optical Radiation"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 342-346 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D356)

Translation: By using the results of an analysis of the interaction of a light impulse and a spherical particle (in the linear approximation) the attenuation coefficient is obtained in the resonance Rayleigh dispersion for monochromatic (K^M) and pulse (K^P) radiation. For the resonance dispersion, K^P and K^M differ for any $\lambda = \omega_0 T$, where ω_0 is the pulse carrier frequency and T is the pulse duration. For nonresonance dispersion, the difference arises with $\lambda \leq 1$. Bibliography of four. A. L.

1/1

USSR

UDC: 621.791.763.1:669.24

LUGIN, V. P., Candidate of Technical Sciences, and NEDZVETSKIY, G. V., Bryansk Institute of Transport Machine Building

"Spot Welding Nickel to Kovar"

Moscow, Svarochnoye Proizvodstvo, No 6, Jun 73, pp 17-18

Abstract: The authors show that it is possible to weld 2mm thick kovar to 0.5mm thick nickel on the TKM-7 capacitor type spot welding machine with the aid of a low-inertia compression mechanism. Welding at a capacitor battery capacitance of 28 microfarads and a force at the electrodes of 28kg produces the strongest welded joint with respect to rupture. Rupture strength is significantly increased by increasing the rigidity of the welding regime, i.e., by reducing the transformation factor of the welding transformer.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--NONLINEAR FREQUENCY CONVERTER OF SPECIAL GEOMETRY -U-

AUTHOR-(04)-BOKNT, B.V., KAZAK, N.S., LUGINA, A.S., SAVKIN, A.YE.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL PRIKLADNOI SPEKTROSKOPII, VOL. 12, FEB. 1970, P. 223-226

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--FREQUENCY CONVERTER, FREQUENCY SHIFTING, CRYSTAL, GEOMETRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0916 STEP NO--UR/0368/70/012/000/0223/0226

CIRC ACCESSION NO--AP0107445

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0107445

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF A SPECIAL CUT OF KDP CRYSTAL CORRESPONDING TO A GIVEN TYPE OF NONLINEAR WAVE INTERACTION FOR THE PURPOSES OF FREQUENCY MULTIPLICATION (HARMONIC GENERATION), FREQUENCY SHIFTING (SUM AND DIFFERENCE FREQUENCY GENERATION), AND RETURNING OF LASER SYSTEMS. THIS ONE SINGLE CUT CONTAINS ALL POSSIBLE PHASE MATCH ANGLES REQUIRED FOR FREQUENCY CONVERSION AND TUNING WITHIN THE TRANSPARENCY BANDWIDTH OF THE CRYSTAL. IN SUCH A NONLINEAR CONVERTER, BEAM FOCUSING IS EFFECTIVELY UTILIZED TO IMPROVE CONVERSION EFFICIENCY, AND LOSSES DUE TO REFLECTION ARE REDUCED TO A MINIMUM. THE PROPOSED CONVERTER MAY BE USED AS THE BASIC ELEMENT FOR A NONLINEAR SPECTROGRAPH.

UNCLASSIFIED

Inorganic Compounds

USSR UDC 543.70

LUGININ, V. A. and TSERKOVNITSKAYA, I. A.

"Separation of Uranium (IV) and (VI) by Electrophoresis"

Leningrad, Vestnik Leningradskogo Universiteta, No 1, Feb 72, pp 138-140

Abstract: The use of complexon solution during electrophoresis on paper as "buffer" solutions in determining inorganic ions has already been described by the authors. Here, using their previous procedures, the authors tested uranium (IV) and (VI) content in complexon III solutions. The method appears effective.

1/1

1/2 022 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--INFLUENCE OF CATALYST RESIDUES ON THE PROPERTIES OF POLYETHYLENE -U-

AUTHOR-(05)-KOROBOVA, N.M., LUGOVA, L.I., MATVEYEVA, E.N., ORLOVA, T.P., PARAMONOV, YE.YA.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (5), 63-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS

TOPIC TAGS--POLYETHYLENE, CATALYTIC POLYMERIZATION, ALUMINUM OXIDE, CHROMIUM OXIDE, ELECTRIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0921 STEP NO--UR/0191/70/000/005/0063/0064

CIRC ACCESSION NO--AP0134650

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0134650

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MEDIUM D. POLYETHYLENE (I) WAS PREPD. BY USING AL SUB2 O SUB3 CRO SUB3 CATALYST. THE CATALYST WAS NOT REMOVED FROM I PRIOR TO TESTING AND ITS AMT. WAS APPROX. DETD. FROM THE AMT. OF ASH IN I. THE INCREASE OF ASH CONTENTS IN I FROM SIMILAR TO 0.0C TO C.03PERCENT DECREASED THE OXION. INDUCTION PERIOD FROM 110 TO 15 MIN. THE ELEC. PROPERTIES OF I (DIELEC. LOSS TANGENT, RESISTANCE, DIELEC. CONST.) DID NOT CHANGE WITH THE INCREASE OF THE ASH CONTENTS IN I BEFORE AGING. HOWEVER, AFTER AGING, DUE TO THE INCREASED NO. OF CO AND CO SUB2 H GROUPS IN I WITH HIGH ASH CONTENTS, ITS ELEC. PROPERTIES WERE NOT SATISFACTORY.

1/3 019 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--STATISTICAL CHARACTERISTICS OF THE ANOMALOUS GRAVITY AND MAGNETIC FIELDS -U-

AUTHOR-(02)-LUGOVENKO, V.N., SUROKA, A.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, GEOMAGNETIZM I AERONOMIYA, VOL X, NO 3, 1970, PP 513-518

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GRAVITY ANOMALY, GRAVITY, MAGNETIC ANOMALY, AUTOCORRELATION FUNCTION, OCEAN, LAND, MOHOROVICIC DISCONTINUITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0526 STEP NO--UR/0203/70/010/003/0513/0518

CIRC ACCESSION NO--AP0132720

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70

2/3 019

CIRC ACCESSION NO--AP0132720

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AUTOCORRELATION FUNCTIONS OF THE ANOMALOUS GRAVITY FIELD WERE COMPUTED FOR FIVE PROFILES IN THE OCEAN. THESE FUNCTIONS ARE COMPARED WITH SIMILAR FUNCTIONS FOR THE LAND. COMPARISON OF THE STATISTICAL CHARACTERISTICS OF THE ANOMALOUS GRAVITY AND MAGNETIC FIELDS LEADS TO SOME INTERESTING CONCLUSIONS CONCERNING THE RELATIONSHIP BETWEEN THE MOHOROVICIC DISCONTINUITY AND THE POSITION OF THE CURIE ISOTHERM. IN THIS PAPER IT IS SHOWN THAT THE ANOMALOUS GRAVITY FIELD HAS THE PROPERTIES OF A PIECEWISE STATIONARY RANDOM FUNCTION. WITH APPROXIMATION OF THE FIELD AUTOCORRELATION FUNCTION BY AN EXPRESSION OF THE TYPE R EQUALS R SUB0 EXP (MINUS ALPHA (TAU)) COS BETA TAU THE CONSTANTS STANTS CHARACTERIZING THE OCEAN ARE AS FOLLOWS: SIGMA EQUALS 0.037 KM PRIMENEGATIVE1, BETA EQUALS 0.038 RAD TIMES KM PRIMENEGATIVE1, R SUB0 EQUALS 136 MGAL PRIME2. THE FIELD AUTOCORRELATION FUNCTION DELTA G CARRIES PRIMARILY INFORMATION ON THE DENSITY INHOMOGENEOUS UPPER MANTLE (TO THE MOHO) AND IS A MEASURE OF THIS INHOMOGENEITY. COMPARISON OF THE STATISTICAL CHARACTERISTICS OF THE ANOMALOUS GRAVITY AND MAGNETIC FIELDS IN THE OCEANS MAKES IT POSSIBLE TO ASSUME THAT THESE FIELDS ARE INTERRELATED AND PROBABLY ARE CAUSED IN THE FIRST APPROXIMATION BY THE SAME THIN LAYER OF THE EARTH. THE GENERAL PLANETARY STATISTICAL CHARACTERISTICS OF THE ANOMALOUS GRAVITY FIELD MAKE POSSIBLE A FAR LESS ARBITRARY DIVISION OF THE EARTH'S ENTIRE GRAVITY FIELD INTO ANOMALOUS AND NORMAL COMPONENTS, SUCH AS WAS DONE FOR THE GEOMAGNETIC FIELD BY V. N. LUGOVENKO IN GEOMAGN. I AERONOMIYA, 7, 1967, 687).

UNCLASSIFIED

3/3 019 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132720

ABSTRACT/EXTRACT--FACILITY: INSTITUTE OF TERRESTRIAL MAGNETISM, IONOSPHERE AND RADIO WAVE PROPAGATION.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SUPERCONDUCTOR NORMAL METAL SUPERCONDUCTOR SUPERCONDUCTING POINT CONTACTS -U-
AUTHOR-(03)-BONDARENKO, S.I., DMITRENKO, I.M., BALANOV, E.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1417-22

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS

TOPIC TAGS--SUPERCONDUCTOR, CONTACT RESISTANCE, RESONATOR, VOLT AMPERE CHARACTERISTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0972 STEP NO--UR/0181/70/012/005/1417/1422

CIRC ACCESSION NO--AT0133050

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0133058

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PECULIARITIES WERE STUDIED OF THE STEADY STATE AND UNSTEADY STATE JOSEPHSON EFFECTS IN THE SUPERCONDUCTOR NORMAL METAL SUPERCONDUCTOR (S-N-S) POINT CONTACTS TA-AG-SN AND SN-AG-SN: DEPENDENCES OF THE CRIT. CURRENTS OF CONTACTS, IOTA SUBC, ON THEIR NORMAL RESISTANCE, R SUBN, TEMP. TAU, THICKNESS OF THE LAYER OF NORMAL METAL D, THE EFFECTS OF RESISTANCE AND THICKNESS ON THE CRIT. TEMP. OF CONTACTS TAU SUBC AND THE CONDITIONS OF OBSERVATION OF INTRINSIC CURRENT STEPS ON VOLT AMPERE CHARACTERISTICS OF THE CONTACTS LOCATED IN A SUPERCONDUCTING RESONATOR. AN EMPIRICAL FORMULA WAS OBTAINED FOR THE CRIT. FIELD; THE DEPENDENCE OBTAINED CORRESPONDS WELL TO THE THEORY OF THE PROXIMITY EFFECT IN THE SYSTEMS S-N-S IN THE LIMIT (SHOWN ON MICROFICHE) (IOTA IS THE FREE PATH LENGTH AND (SHOWN ON MICROFICHE) WHERE UPSILON SUBF IS THE FERMI VELOCITY). FACILITY: FIZ.-TEKH. INST. NIZKIKH TEMP., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 537.312.62

KOLIN'KO, L. YE., NARBUT, T. P., BONDARENKO, L. A., BONDARENKO, S. I., DMITRIYENKO, I. M.

"Methods of Creating Weak Superconducting Contacts"

Tr. Fiz.-tekhn. in-t nizk. temperatur AN USSR (Works of the Physico-Technical Low Temperature Institute of the Ukrainian SSR Academy of Sciences), 1970, vyp. 9, pp 91-110 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D469)

Translation: A study was made of the basic methods of obtaining weak superconducting contacts: 1) micropuncture of the dielectric layer or normal metal between the superconductors; 2) pressing a sharp needle to the flat surface of the superconductor; 3) electric microrupture (fritting) of the dielectric layer between the metals. The possibility of using whiskers of various metals as thin conducting couplings is also investigated. The basic characteristics of the contacts obtained by the enumerated methods are analyzed, and conclusions are drawn regarding the prospectiveness of their application in devices using the phenomenon of quantum interference in superconductors. There are 6 illustrations, 1 table and a 37-entry bibliography.

1/1

USSR

UDC 547.831.3

LUGOVIK, B. A., YUDIN, L. G., BORODIN, P. V., VINOGRADOVA, S. M., and KOST, A. N., Moscow State University Imeni M. V. Lomonosov

"Reactions of 1,2-Dihydroquinolines. III. Addition of Benzene and Phenyl Halides to the Double Bond of 2,2,4-Trimethyl-1,2-dihydroquinolines"

Riga, Khimiya Geterotsiklicheskikh Soyedinenii, No 6, Jun 71, pp 795-797

Abstract: 2,2,4-Trimethyl-1,2-dihydroquinoline (I) does not react with benzene at room temperature, even with excess $AlCl_3$. When heated it yields products of di- and polymerization. On the other hand the hydrochloride or N-acetyl derivative of (I) adds benzene at room temperature. When $AlCl_3$ is replaced by iron or zinc chloride or by strong mineral acids, the reaction does not take place at all. Solvents which are capable of forming stable complexes with $AlCl_3$ -- such as diethyl ether, nitromethane, dibutyl ether, or nitrobenzene -- hinder the reaction. Substituting a benzyl group in position 1 or a methyl group into the aryl ring has practically no effect on the reaction, while the presence of a methoxy group in position 6 hinders the process considerably. Hence, addition of benzene to (I) requires a preliminary protonation or acylation of the amino group. Phenyl halides react under drastic conditions yielding only para-substituted 4-aryl-2,2,4-trimethyl-1,2,3,4-tetrahydroquinolines.

1/1

USSR

LUGOVIK, B. A., BORODIN, P. V., YUDIN, L. G., KOST, A. N., Chemistry Department, Moscow University

"A Method for Preparing Substituted 1,2,3,4-Tetrahydroquinolines"

USSR Author's Certificate No 253067, class 12p, 1/10 (C 07 d), filed 17 July 68, published 24 Feb 70 (from RZh-Khimiya, No 21 (II), 10 Nov 70, Abstract N579 by I. A. Mel'nikova)

Translation: These compounds, intermediate products for the synthesis of repellents, are prepared by treating substituted 1,2-dihydroquinoline hydrochloride with a mixture of aliphatic or alicyclic hydrocarbons in the presence of $AlCl_3$; 78 g of anhydrous $AlCl_3$ is added to a suspension of 70 g of 2,2,4-trimethyl-1,2-dihydroquinoline hydrochloride in 120 ml of n-heptane. The mixture is stirred for 30 min at 66-70°, decanted, and the tarry residue treated with 60 g of NaOH solution in 400 ml of ice water and extracted with 150 ml of ether. The organic layer is washed with water, dried with KOH, and fractionated, forming (i) 26 g of 2,2,4-trimethyl-1,2,3,4-tetrahydroquinoline, yield 44.8%, boiling point

1/2

USSR

LUGOVIK, B. A., et al, USSR Author's Certificate No 253067, class 12p, 1/10 (C 07 d), filed 17 July 68, published 24 Feb 70 (from RZh-Khimiya, No 21 (II), 10 Nov 70, Abstract N579 by I. A. Mel'nikova)

83-6°/2, melting point 41° (from heptane) and (ii) a fraction with a boiling point of 130-50°/2 which is dissolved in the excess n-heptane, treated with 15% HCl, filtered, the mother liquor alkalized with 10% KOH solution, extracted with ether, the organic layer washed with water, and dried with KOH, forming 6.8 g of 2,2,4-trimethyl-7-heptyl-1,2,3,4-tetrahydroquinoline, yield 8.3%, boiling point 125-30°/2. The following are prepared in a similar fashion (the compounds, yield in %, boiling point in °C are given): 2,2,4-trimethyl-1,2,3,4-tetrahydroquinoline, 50, 83-5/2; 2,2,4-trimethyl-7-cyclohexyl-1,2,3,4-tetrahydroquinoline, 13, 144-6/2; 2,2,4,8-tetramethyl-1,2,3,4-tetrahydroquinoline, 74 95-8/2, $n^{20}D$ 1.5394, d_4^{20} 0.9838.

2/2

USSR

UDC 547.7+547.775+546.183

LUGOVKIN, B. P., All Union Scientific Research Institute of Public Health, Kazan'

"Synthesis of the Esters of 3-Indolyl(1-aryl-3-methylpyrazolon-5-yl-4)-methanephosphonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 6, Jun 73, pp 1261-1263

Abstract: Reaction of 4-(3-indolidene)-1-phenyl-3-methylpyrazolone-5 and 4-(3-indolidene)-1-(p-tolyl)-3-methylpyrazolone-5 with dimethyl- and diethylphosphorous acids gave dimethyl and diethyl esters of 3-indolyl-(1-phenyl-3-methylpyrazolon-5-yl-4)methanephosphonic acid and 3-indolyl-1-(p-tolyl)-3-(methylpyrazolon-5-yl-4) methanephosphonic acid. 4-(3-Indolidene)-1-(o-chlorophenyl)-3-methylpyrazolone-5 with diethylphosphorous acid gave the diethyl ester of 3-indolyl-1-(o-chlorophenyl)-3-(methylpyrazolon-5-yl-4) methanephosphonic acid.

1/1

UDC 547.538+547.26'118.547.775

USSR

LUGOVKIN, B. P., All-Union Scientific Research Institute ofr Work Safety, Kazan'

"Synthesis of Dialkyl Naphthyl(1-aryl-3-methylpyrazolon-5-yl-4)-methanephosphonates"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2079-2081

Abstract: Phosphorylation of 4-naphthylidene-1-aryl-3-methylpyrazolones by dialkyl phosphites in the presence of sodium alkoxide results in the formation of dialkyl α-naphthyl(1-aryl-3-methylpyrazolon-5-yl-4)methanephosphonate and β-naphthyl(1-aryl-3-methylpyrazolon-5-yl-4) methanephosphonate. A total of 17 compounds are given. The IR spectra of the initial compounds (I-VI) show very intensive absorption bands at 1685-1705 cm^{-1} typical of stretching vibrations of the C=O group. Some of the other compounds (VII-XVII) have wide absorption bands of about 2600 cm^{-1} for the O-H group, very strong bands within 1045-1070 cm^{-1} for the P-O-C group and intensive bands within 1175-1190 cm^{-1} (P=O). The low values of the O-H and P=O groups point to their participation in the formation of hydrogen bonds. There were intensive absorption bands at 1500-1600 cm^{-1} (C=C) superimposed on the naphthalene ring bands. IR spectroscopy indicates the reaction products to have are enols.

1/1

UDC 542.91+547.7+661.718.1

USSR

LUGOVKIN, B. P., All Union Scientific Research Institute of Labor Protection, Kazan'

"Synthesis of Naphtyl-(3-alkyl-5-rhodanyl)-methanephosphonate Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 815-817

Abstract: Condensation of α-naphtaldehyde and β-naphtaldehyde with 3-alkyl-5-rhodanines in presence of piperidine gave α-naphtylidene-3-alkyl-5-rhodanines and β-naphtylidene-3-alkyl-5-rhodanines, respectively. Dialkyl phosphites added to these compounds at the ylid bond to yield naphtyl-(3-alkyl-5-rhodanyl)methanephosphonate esters.

1/1

USSR UDC 547.538+547.532+546.183+547.775

LUGOVKIN, B. P., All-Union Scientific Research Institute of Work Safety, Kazan'

"Synthesis of 1-Aryl-3-methyl-4-(α-dimethylphosphonobenzyl)-5-pyrazolones"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1050-1052

Abstract: The author investigated the interaction of 4-arylidene-1-aryl-3-methyl-5-pyrazolones with dimethylphosphorous acid in the presence of sodium methylate. The reaction yields dimethyl esters of aryl-(1-aryl-3-methylpyrazolone-5-yl-4)methanephosphonic acid. A study of IR spectra indicates the enol structure of the resultant compounds.

The author thanks V. S. VINOGRADOVA for deciphering the IR spectra of benzylidenemethylpyrazolones and the synthesized esters.

1/1

1/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CONDENSATION OF 2,PYRIDYLAZOMETHINES AND 2,2,DIPYRIDYLDIAZOMETHINES WITH DIALKYL PHOSPHITES -U-

AUTHOR--LUGOVKIN, B.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 563-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CONDENSATION REACTION, PYRIDINE, AZO COMPOUND, ALKYL PHOSPHITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1059 STEP NO--UR/0079/70/040/003/0562/0564

CIRC ACCESSION NO--AP0124716

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124716

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING 1.7 G 2,PYRIDINECAROBXALDEHYDE WITH 1.95 G P,MEOCH SUB6 H SUB4 NH SUB2 IN ETOH 1 HR GAVE 80PERCENT 2,PICOLYLIDENE,P,ANISIDIEN, M. 122-3DEGREES (PICRATE M. 122-3DEGREES); P, PHENETIDINE ANALOG, 92PERCENT M. 56-7DEGREES; PICRATE M. 137-8DEGREES. THESE AZOMETHINES AND (RO) SUB2 PHO IN MODERATE EXCESS WERE TREATED WITH CATALYTIC AMTS MEOHA,MEOH (EXOTHERM), THEN HEATED-MIN AT 80DEGREES TO GIVE THE FOLLOWING I AND II (AR OR Z AND R SHOWN): (SHOWN ON MICROFICHE). FACILITY: VSES. NAUCH.-ISSLED. INST. OKHR. TR., KAZAN, USSR.

UNCLASSIFIED

USSR UDC 547.574.4+546.183+547.821

LUGOVKIN, B. P., Kazan' Scientific Research Institute of Labor Protection

"Synthesis of Esters of Benzyl(aminopyridyl)phosphonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 5, May 72, pp 966-969

Abstract: It was established earlier that phosphorylation of azomethins of the heteryl-CH=N-aryl structure in which 2-pyridyl, 6-quinolyl, 8-quinolyl and 8-purinyl radicals are the heterorings leads to the formation of esters of heteryl-arylamino)methylphosphonic acids. The following were synthesized: 1) arylpyridylazomethins, from aromatic aldehydes (benzaldehyde, anisaldehyde, and p-dimethylaminobenzaldehyde) and aminopyridines, and 2) esters of benzyl(aminopyridyl)phosphonic acids, from arylpyridylazomethins and dimethyl- and diethylphosphorous acids in the presence of sodium alkoxide. The author gives a detailed description of the experiments, and two tables of aryl-CH=N-pyridylazomethins and esters of benzyl(aminopyridyl)phosphonic acids.

1/1